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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/034,133

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Peter Michael Edic

RD-28,282

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08/24/2004

GENERAL ELECTRIC COMPANY (PCPI)

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EXAMINER

KIKNADZE, IRAKLI

ART UNIT

PAPER NUMBER

2882

DATE MAILED: 08/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/034,133

Applicant(s)

EDIC ET AL.

Examiner

Irakli Kiknadze

Art Unit

2882

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 May 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. In response to the Office action dated February 17, the response has been received on May 17, 2004.

Claim 13 has been amended.

Claims 1-18 are currently pending in this application.

Response to Arguments

2. Applicant's arguments with respect to claims 1-18 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Lai (US Patent 5,946,371).

With respect to claims 1 and 16, Lai teaches a method for arranging detector sections for an imaging system that has a field of view that is defined by a rotational axis and imaging geometry comprising: providing a plurality of

Art Unit: 2882

detector sections, and arranging the detector sections in an asymmetric arrangement about a central axis of the field of view (see abstract; column 24, lines 57-66; claim 1).

5. Claims 1-12 and 16-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Sohval et al. (US Patent 4,637,040).

With respect to claim 1, Sohval teaches a method for arranging detector sections for an imaging system that has a field of view that is defined by a rotational axis and imaging geometry comprising: providing a plurality of detector sections (3'), and arranging the detector sections (3') in an asymmetric arrangement about a central axis of the field of view (column 9, lines 23-31; Fig. 3).

With respect to claims 2 and 3, Sohval shows that a plurality of detector sections (3') that have substantially equal lengths and adjacent detector sections are positioned apart from each other a distance that is less than the length of the detector sections (column 9, lines 23-31; Figs. 2 and 3).

With respect to claims 4 and 5, Sohval shows positioning at least one of the detector sections proximate to an edge of the field of view (Fig. 3).

With respect to claims 6 and 12, Sohval teaches a method for arranging the detector sections and a detection array for an imaging system that has a field of view that is defined by a rotational axis and imaging geometry comprising: providing a plurality of detector sections that have substantially equal lengths; positioning adjacent detector sections (3') at a distance apart that is less than the length of the detector sections, and arranging the detector sections in an

Art Unit: 2882

asymmetric arrangement about a central axis of the field of view such that at least one of the detector sections is proximate to an edge of the field of view (Fig. 3; column 9, lines 23-31).

With respect to claim 7, Sohval teaches a detection array for an imaging system that has a field of view that is defined by a rotational axis and imaging geometry, the array comprising a plurality of detector sections (3') arranged asymmetrically about a central axis of the field of view (Fig. 3).

With respect to claims 8 and 9, Sohval shows that detector sections have substantially equal length and the adjacent detector sections are apart at the distance that is less than the length of the detector sections (Fig. 3).

With respect to claims 10 and 11, Sohval shows that at least one of the detector sections is proximate to an edge of the field of view (Fig. 3).

With respect to claims 16 and 17, Sohval teaches a scanning apparatus comprising: a gantry (6); an emitter (1) that has a field of view that is defined by a rotational axis and imaging geometry, the emitter (1) secured to the gantry (6); and an array of detector sections (3') secured to the gantry (6) opposite the emitter (1) (Figs. 1 and 3), the detector sections (3') arranged asymmetric about a central axis of the field of view. A processor configured to collect data from the detector sections (column 8; lines 4-27 and column 9, lines 23-31).

With respect to claim 18, Sohval teaches a scanning apparatus comprising: a gantry (6); an emitter (1) that has a field of view that is defined by a rotational axis and imaging geometry, the emitter (1) secured to gantry; an array of detector sections (3') secured to the gantry (6) opposite the emitter (1) (Figs. 1

Art Unit: 2882

and 3), the detector sections (3') arranged asymmetric about a central axis of the field of view, the detector sections having substantially equal lengths, the detector sections separated by a length that is less than the length of each the individual detector sections; and a processor configured to collect data from the detector sections (column 8; lines 4-27 and column 9, lines 23-31).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sohval et al. (US Patent 4,637,040) in view of Tanaka (US Patent Re. 35,848).

With respect to claim 13, Sohval teaches a method for performing a computed tomography scan (Figs.1 and 3) of an object (5) utilizing an imaging system including a gantry (6) and a rotational axis and imaging geometry that defines a field of view comprising: providing a plurality of detector sections (3'); arranging the detector sections in an asymmetric arrangement about a central axis of the field of view; collecting data from the detector sections. Sohval silent about rotating the gantry (6) a first angular increment and subsequent increments to alternate positions such that a plurality of specific angular locations are

Art Unit: 2882

identified during one complete rotation of the x-ray source (1) and detector (3') about the object (5). Tanaka teaches an X-ray CT scanner having an X-ray tube (1) for emitting X-rays at a subject (3) under examination and an X-ray detector (4) collecting data from the detector sections in a plurality of angular positions while rotating the gantry (6) with a first angular increment and subsequent increments to alternate positions such that a plurality of specific angular locations are identified during one complete rotation. A reconstruction algorithm is used to generate a reconstruction of the subject using the collected data. Projection data acquired for a full 360° scan of the subject can be used to reduce artifacts in reconstructed images (column 4; line 62 and column 5, lines 8). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to employ teachings of Tanaka in the method of a computed tomography scan of Sohval in order to reduce artifacts in reconstructed images.

With respect to claim 14, Sohval shows a plurality of detector sections that have substantially equal lengths (Fig.3).

With respect to claim 15, Sohval teaches that collecting data from the detector sections at a plurality of angular positions comprises collecting data from the detector section at each position (column 8; lines 28-33).

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Irakli Kiknadze whose telephone number is 571-272-2493. The examiner can normally be reached on 9:00- 5:30.

Art Unit: 2882

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on 571-272-2490. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Irakli Kiknadze
August 12, 2004

IK



DAVID V. BRUCE
PRIMARY EXAMINER